OVERVIEW OF THE CLASSIFICATION SYSTEM

SYSTEM ORGANIZATION

The United States Patent Classification System (USPC) divides the entire set of U.S. patents into searchable collections based on the technology claimed in the patents. The primary groupings of patents in the USPC are called **classes**. Utility classes are based on (1) technology associated with a particular industry, or (2) subject matter having similar function, use, or structure. Design classes are based on ornamental appearance. Plants are provided for in a single Plant class. Classes are subdivided into relatively small, ordered collections of patents called **subclasses**. A subclass is the smallest searchable collection of documents in the USPC. The ordered listing of subclasses that make up a class is called a **class schedule**.

CLASSIFICATION SCHEDULES

An important characteristic of class schedules is that the order in which a subclass appears in the schedule establishes its superiority among the other subclasses in the schedule. The number assigned to a subclass title merely provides an address for the storage area in which the art physically resides.

Subclass titles that do not have a dot between the title and numeric designator for the subclass are referred to as "**Mainline**" subclasses. Indented subclasses are referred to by the number of indent levels (with each dot representing an indent level); e.g., a subclass indented one level below a Mainline subclass is referred to as a "**one-dot-subclass**." A subclass under which another subclass is indented is called a parent subclass. Two subclasses positioned at the same level of indentation and having the same parent subclass are referred to as "**coordinate**" subclasses.

A second important characteristic exhibited by the classification schedules is the inclusive nature of subclasses. This means that a subclass accepts the subject matter for which it explicitly provides, as well as any combinations of that subject matter that are (1) proper for the class and (2) not provided for higher in the class schedule.

HOW TO READ SUBCLASS TITLES AND DEFINITIONS

To understand the content of the material classified in a particular subclass in any given class schedule, the class title and the title(s) of any or all relevant subclass(es) under which the particular subclass is indented must be read.

The following schedule is a hypothetical system to sort and classify scrap in a junkyard.

1 COMBINED BAR, LINK AND BALL
2 COMBINED BAR AND LINK
3 COMBINED BAR AND BALL
4 COMBINED LINK AND BALL
5 CHAIN
21 . With end fastener
22 . With flaccid cover
23 . . Removable
6 BAR
7 LINK
8 BALL
9 . Hollow
10 . . Perforated
11 . . Grooved
12 . Perforated
13 . Grooved
14 . Mineral
15 . . Metallic
16 . . . Aluminum
17 . . . Zinc
18 RUBBER
19 MISCELLANEOUS

The above schedule is similar to an outline. Each indented subclass further qualifies the subclass under which it is indented and, consequently, must be read as including all of the limitations of the parent subclass. For example, subclass 11 is read as a grooved hollow ball and will accept only items having at least these attributes. However, due to the superiority requirements of the system, a hollow ball that is both perforated and grooved would be located in subclass 10. The definition of any given subclass includes the definition of the class and of any

subclasses under which the given subclass may be indented.

ARRANGEMENT OF SUBCLASSES

In most modern class schedules, subclasses are generally arranged in order of diminishing complexity, with the most complex inventions positioned at the top of the class schedule. Combined machines or processes (e.g., those which perform diverse operations such as cutting and gluing or pressing and heating) will be found higher in the class schedule than single operation machines or processes, which in turn are located higher than the individual parts of the machines (or steps in the processes). Minor details or accessories are normally found near the bottom of the class schedule, and "miscellaneous" subject matter is placed at the very bottom of the schedule. An important exception to the ordering of subclasses by complexity is that "special" subclasses for inventions having a common unique feature may be positioned above subclasses for more complex inventions.

CLASSIFICATIONS ASSIGNED TO PATENTS

Because claims define the novel disclosure(s) in a patent, each claim is assigned a classification. These are considered mandatory classifications (a claim that recites plural embodiments of an invention may require plural mandatory classifications). Once all the claims have been classified, one of the mandatory classifications is selected as the "original" (OR) classification. The OR classification is an administrative tool used by USPTO (1) to assign applications to a particular organizational unit for examination, and (2) to aid in USPC reclassification.

In addition to the mandatory classifications described above for a patent, discretionary cross-reference (XR) patent classifications may be designated for any subject matter disclosed which is (1) novel and (2) of sufficient detail and clarity to be used as a reference.

PRIMARY SUBCLASSES

Primary subclasses are the principal subclasses in the USPC. The two distinguishing features of a USPC primary subclass are

(1) it can serve as the classification to which a U.S. patent application can be assigned for examination, and

(2) it can serve as the original (OR) classification of a U.S. patent.

Only primary subclasses can be mandatory classifications in the USPC. All other classifications are discretionary. Primary subclasses appear first in a class schedule.

A primary USPC class is one which contains primary subclasses.

ALPHA SUBCLASSES, DIGESTS, AND CROSS-REFERENCE ART COLLECTIONS

As necessary, Patent Examiners create "alpha" subclasses, cross-reference art collections, and digests to simplify searches within their assigned arts. These are explained below.

> Alpha Subclass: A collection of patents created from those patents contained in a primary subclass. This collection is then made an indented subclass under the original primary subclass, and is given a subclass designator which is composed of the original primary subclass number followed by a one or two character alphabetic (hence "alpha") designation (e.g., A, B, T, DD). The original primary subclass containing those patents not classified in the new alpha subclass(es) is given the alphabetic designation "R" (indicating Residual). The numeric primary subclass now equates to the "R" subclass plus any alpha subclasses indented thereunder. A subclass array in Class 26, TEXTILES: CLOTH FINISHING illustrates this concept.

15R	. Shearing
16	. . Ornamental
17	. . With seam detector
18	. . Automatic extension rests
15L	. . With lubrication
15FB	. . With flexible bed
18.5	SHRINKING

Alpha subclasses are not defined beyond their titles and the definition of the primary subclass from which they were formed. Alpha subclasses are not included in The Public Search File.

Digest or Cross-Reference Art Collection: A collection of patent copies based on a concept related to the concepts of a class but not to any particular subclass of that class. Any cross-reference art collections and digests associated with a class are listed in numeric sequence after the primary subclasses in a class schedule. Cross-reference art collections are defined (except for ECLA-based cross-reference art collection subclasses); digests, in most instances, are not defined.

The USPC includes some cross-reference art collection classes and subclasses that are based upon the European Patent Office Classification System (ECLA). These USPC cross-reference art collection classes are based on ECLA subclasses, and the USPC cross-reference art collection subclasses therein are based on ECLA groups. Although these art collections initially contained only U.S. patents classified by the EPO examiners, U.S. patent examiners may have changed those classifications or added others. The (USPTO) image and text search systems are used for searching the documents in these collections. Examples of cross-reference art collection classes based on ECLA subclasses are Classes 930, 968, 976, 984, and 987. These classes have informal definitions that include descriptions of the subject matter in the class, and may include search notes to other classes. The class schedules appear in the Manual of Classification; these schedules occasionally have informational text notes embedded in the text of the subclasses, and associated ECLA classifications appear in brackets at the end of each subclass title.

Examples of ECLA based cross-reference art collection subclasses in USPC primary classes are 604/907-921 and 422/908-948. These ECLA-based collections are not defined. As in the ECLA-based classes, associated ECLA classifications appear in brackets at the end of each subclass title.

The long-standing USPTO practice of classifying non-patent literature and all foreign documents into the USPC was terminated on October 1, 1995. Foreign documents in the examiners' paper search files are current through March 25, 1995. Most foreign documents after that time are searchable through on-line databases. Foreign documents that are (1) part of USPC classifications that undergo reclassification, and (2) are not reclassified as part of the reclassification, are currently being transferred directly from the old USPC subclasses to foreign art collections placed at the end of the class containing the new USPC classifications. These art collections are numbered with a six-character designation consisting of the letters FOR in capital letters, followed by three digits, with a space between FOR and the three digits, e.g., FOR 701. There are informative notes appropriately placed to assist users of the foreign art collections. A special subclass, FOR 000, has been created in each class. FOR 000 represents a classification for foreign documents corresponding to the class level of the class. Typically, foreign documents classified using automation are classified in FOR 000 when classification lower in the schedule is uncertain.

SEARCH TOOLS

To locate patents pertaining to a specific field of technology or science within the USPC requires a good measure of judgment as well as the continuous and coordinated use of the following publications:

1. **Index to the U.S. Patent Classification System**
2. **The Manual of Classification**
3. **Patent Classification Definitions**
4. **Classification Orders**

OVERVIEW OF THE CLASSIFICATION SYSTEM

The **Index to the U.S. Patent Classification System** contains an alphabetical listing of technical and common terms representative of arts, processes, machines, manufactures, compositions of matter, etc., along with a classification in which pertinent patents or literature (prior art) for each term in the listing can be found. As a search tool, the Index is useful as an introduction to the classification system for those who lack experience in using the classification system or for those who are unfamiliar with the particular technology that they are investigating. In the Index, the plus sign adjacent to a subclass number refers to the subclass and all subclasses indented under it.

The **Manual of Classification** contains a collection of the class schedules, a list of the class titles in numerical order by class number and in alphabetical order, a list of the classes by Examining Groups, and a hierarchical listing of the classes (for purposes of application assignment) in each of the three major discipline areas. Although class and subclass titles found in the Manual are as suggestive as possible of the subject matter covered, they should not be used alone to delineate subject matter. Rather, the Manual should be used only in conjunction with the class and subclass definition(s) and associated search notes.

The **Patent Classification Definitions** comprise statements of the scope embraced by each of the classes, subclasses, and cross-reference art collections (the Design classes and subclasses are in the process of being defined). Also included are search notes directing the searcher to related subject matter in other classes and subclasses. Search notes are helpful in qualifying and explaining the limits of a class or subclass.

Classification Orders are issued throughout the year and contain information relating to U.S. patent classifications that are established or abolished as a result of reclassification projects. These orders are used to bridge the gap between the time a project issues (when the change is officially made) and the time that regular search tools are updated to include the new information.

SUGGESTIONS FOR SEARCH

If the use of the Index fails to reveal an appropriate field of search, the following suggestions should help in delineating a field of search.

(1) Determine what is the essential function, effect, or structural characteristic of the art or instrument being searched.

(2) Scan the titles in the sections entitled "CLASSES WITHIN THE U.S. CLASSIFICATION SYSTEM Arranged by Related Subjects", as well as the section "CLASSES ARRANGED IN ALPHABETICAL ORDER" in the front of this Manual.

(3) Note particularly those titles that seem to include the invention being searched.

(4) Inspect carefully the class definition and related notes.

(5) Scan the subclass schedule of the class if the class definition indicates that the selected class is the proper class. Review the mainline subclass titles.

(6) Select the first appearing mainline (capitalized) subclass that includes a characteristic of the invention and study the definition for that subclass.

(7) Scan the one-dot subclasses indented under the mainline subclass and select the first appearing title that provides for the invention.

(8) Repeat this process through succeeding levels of indentation until reaching the most specific indented subclass whose title and definition encompass the invention in question, and then review the documents in the subclass.

(9) If this subclass contains nothing pertinent, search the subclass(es) under which it is indented and check the "See or Search Class" and "See or Search This Class, Subclass" notes in the definition of the subject subclass and of those subclasses under which it is indented. If any cross-references in the subject subclass are closely related to the invention in question, check the definitions and notes of the original classifications of such cross-references.

(10) Consider other possible classes noted in step 2 if the pertinent art still is not found.

Failure to find any pertinent art usually indicates that the proper place in the classification system has not been located. Classifiers in each of the Technology Centers are available for consultation to outline a field of search.

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